

Teaching Evidence-based Medicine in a Managed Care Setting: From Didactic Exercise to Pharmacopolicy Development Tool

*Natan R. Kahan, RPh, MHA; Yaakov Fogelman, MD;
Dan-Andrei Waitman, MD, MPH; Ernesto Kahan, MD, MPH;
Avihu Bar-Yochai, MD; Avraham Meidan, MD; and Eliezer Kitai, MD*

Objectives: To implement a residency-based program for the teaching of evidence-based medicine in an Israeli HMO and to incorporate this effort into the HMO's routine drug policy formulation process.

Methods: Residents and preceptors participating in the family practice residency program in The Leumit Health Fund, 1 of the 4 HMOs operating in Israel, were invited to participate in a workshop for the formulation of guidelines for antibiotic treatment of the common infectious diseases encountered in primary care. The participants were allocated to teams consisting of a preceptor (an attending physician) and a resident physician, with each team choosing a different disease to analyze. Upon completion of the program, a questionnaire was sent to all residents and preceptors who participated in the workshop to evaluate attitudes concerning the outcomes of the program.

Results: Guidelines for the treatment of 14 infectious diseases commonly seen in the primary care setting were formulated. The program was accepted by the participants, who ultimately cooperated with the relevant HMO stakeholders in the formulation of official HMO policies for drug prescribing.

Conclusion: The utilization of family practice residents is a feasible method of formulating in-house clinical practice guidelines for a managed care setting. The program was mutually beneficial for both the residents and for the stakeholders in the HMO.

(Am J Manag Care. 2005;11:570-572)

Clinical practice guidelines (CPGs) are becoming increasingly common in the clinical setting.¹⁻³ Clinicians, policymakers, and payers see CPGs as tools for making healthcare more consistent and efficient and for closing the gap between what clinicians practice and what scientific evidence supports.¹ Accordingly, an increasing number of medical schools and residency programs are instituting curricula for teaching the principles and practice of evidence-based medicine (EBM),² utilizing various teaching techniques such as short courses,^{3,4} workshops,⁵ structured programs within clinical clerkships,⁶ and formulation of local, residency-developed guidelines.⁷ Although these endeavors have included hospital and community settings, the unique potential of the managed care setting as a teaching platform for EBM has yet to be realized.

This study had 2 objectives. The first was to explore the feasibility of implementing a family practice residency-based program for the teaching of EBM in an Israel HMO. The second was to investigate the possibility of incorporating this effort into the HMO's routine drug policy formulation process.

METHODS

This study was conducted in The Leumit Health Fund of Israel. Residents and preceptors (attending physicians) participating in this HMO's family practice residency program were invited to participate in a workshop for the formulation of evidence-based guidelines in the community setting. The workshop included 3 sessions conducted over a 12-month period and was coordinated by the director of the residency program, a professor of family medicine.

To concentrate on an area in which the primary care physician is the exclusive clinical decision maker, the workshop was limited to the formulation of CPGs for the treatment of infectious diseases commonly encountered in primary care. During the first session, the director introduced the subject of CPGs and lectured on the evaluation of published evidence. He then described the objectives of the workshop and lectured on the utilization of available data sources for the project. The participants were allocated to teams consisting of a preceptor and a resident, with each team choosing a different disease to cover. Each team conducted a systematic review of the literature on their subject via Medline and Cochrane database searches. Current guidelines from other clinical settings, both international and

From Leumit Health Fund, Tel-Aviv, Israel (NRK, YF, DAW, AW, E Kitai); Hadassah Medical Organization School of Public Health, The Hebrew University of Jerusalem, Jerusalem, Israel (NRK); the Department of Family Medicine, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel (E Kahan, E Kitai); and the Department of Infectious Diseases, Assaf-Harofeh Medical Center, Zrifin, Israel (ABY).

Address correspondence to: Natan R. Kahan, RPh, MHA, Leumit Health Fund, 23 Schprintsak St, Tel-Aviv, 64738 Israel. E-mail: nkahan@leumit.co.il.

Israeli, also were studied. When feasible, HMO laboratory data on pathogen antibiotic resistance patterns were analyzed. Like similar programs,⁸ this workshop included a pharmacist (in this case, the HMO's pharmacoepidemiologist) as a preceptor to provide information regarding current drug utilization patterns, drug costs, and product availability.

During the second session, preliminary drafts of the guidelines were presented alongside the evidence on which they were based. Questions, comments, and suggestions for improving or modifying the guidelines were requested. Subsequently, revised versions were submitted to the project coordinator for review and were forwarded to all participants with a request for feedback. Relevant feedback was integrated into final versions of the guidelines. These drafts then were submitted to the HMO's infectious disease consultant and the Medical Division for evaluation.

The third and final session, although still chaired by the project coordinator, was conducted with the declared purpose of reaching consensus amongst all relevant stakeholders within the HMO for a designated antibiotic policy. Therefore, the assistant CEO for medicine, the HMO's infectious disease consultant, and the chairman of the Medicines Committee attended. After the project coordinator presented the amended version of a guideline, feedback was requested from the infectious disease consultant regarding the clinical aspects of the disease in question, and from the chairman of the Medicines Committee concerning the pharmacoeconomic ramifications of the drug therapies recommended. At this point, the floor was opened for discussion, and final decisions were made regarding the guideline being discussed. The project coordinator then prepared the final versions of the guidelines for publication and promulgation to all primary care physicians working in the HMO.

On completion of the program, a questionnaire was sent to all workshop participants. This self-reported questionnaire was based on a previously published questionnaire,⁷ modified by the researchers to include questions pertaining to attitudes about the decision-making process in the managed care setting and about the treatment of infectious diseases in the community. It consisted of 10 questions using a 5-point Likert scale (1 = strongly agree, 5 = strongly disagree) to measure degree of physician agreement.

RESULTS

Twelve residents and 9 preceptors participated in the workshop. In addition to the 3 sessions, each participant spent between 5-10 hours on independent research. The participants succeeded in formulating

guidelines for the following 14 diseases: acute bronchitis, acute gastroenteritis, acute otitis media, acute sinusitis, bacterial endocarditis, cellulitis, community-acquired pneumonia, erysipelas, folliculitis-furuncle-carbuncle, gonorrhoea, impetigo, pelvic inflammatory disease, tonsillopharyngitis, and urinary tract infection. After completion, the guidelines were adopted by the Medical Division and were distributed to all primary care physicians employed by the HMO.

Eleven residents and 9 preceptors returned the completed questionnaire for a response rate of 95.2%. The survey questions and answers appear in the **Appendix**. The participants generally found the workshop to be a positive experience in which they learned practical skills in EBM (mean score = 1.70), and which qualified them to write CPGs (mean score = 1.95). The participants generally believed that they would use the guidelines in their practices (mean score = 1.70) and thought that the workshop improved their capabilities for providing quality care to their patients (mean score = 1.50). The participants responded that the experience strengthened their understanding of the decision-making process for setting drug policies in the HMO (mean score = 1.75) and that they thought that participating in the process strengthened their confidence in the policies that resulted (mean score = 1.95). Concerning the program itself, the participants thought that they had adequate access to the necessary information sources (mean score = 1.90), and showed willingness to participate again in the development of CPGs (mean score = 1.95) and in future workshops conducted in this format (mean score = 1.95).

DISCUSSION

This program, which was initially implemented as an academic exercise for the teaching of EBM to family practice residents, ultimately was utilized by the hosting managed care system for the formulation of policies for drug prescribing. Platt et al have commented that HMOs are distinguished from other healthcare systems by unique attributes such as defined patient populations, unique data capabilities, and their organizational capabilities and access to both clinicians and members.⁹ These unique qualities, which are inherent to the managed care environment, coalesced in this exercise to create a platform both for development of methodologies for drug-policy analysis and for hosting academic programs.

The findings of this study demonstrate that the HMO augments its potential to act as an "organizational laboratory" when it functions as a teaching environment, because it draws on a cadre of qualified professionals with the motivation to participate in such endeavors.

The degree of willingness to participate in future programs observed in the survey is significant in that it indicates that the HMO can indeed rely on this valuable resource in the future.

CONCLUSION

By incorporating family practice residents led by an academic coordinator into the drug policy decision-making process, the HMO realized its potential as a unique teaching setting while benefiting from a previously untapped source of professional manpower. The implementation of this program provided mutual benefits for both the participating residents and the stakeholders in the HMO, and may serve as a template for future efforts in the managed care setting.

REFERENCES

1. Woolf SH, Hutchinson A, Eccles M, Grimshaw J. Potential benefits, limitations, and harms of clinical guidelines. *BMJ*. 1999;318:527-530.
2. Hatala RH, Guyatt G. Evaluating the teaching of evidence-based medicine. *JAMA*. 2002;288:1110-1112.
3. Ghali WA, Saitz R, Eskew AH, Gupta M, Quan H, Hershman WY. Successful teaching in evidence-based medicine. *Med Educ*. 2000;34:18-22.
4. Smith CA, Ganschow PS, Reilly BM, et al. Teaching residents evidence-based medicine skills. A controlled trial of effectiveness and assessment of durability. *J Gen Intern Med*. 2000;15:710-715.
5. Ross R, Verdick A. Introducing an evidence-based medicine curriculum into a family practice residency—is it effective? *Acad Med*. 2003;78:412-417.
6. Thomas PA, Cofrancesco J. Introduction of evidence-based medicine into an ambulatory clinical clerkship. *J Gen Intern Med*. 2001;16:244-249.
7. Epling J, Smucny J, Patil A, Tudiver F. Teaching evidence-based medicine skills through a residency-developed guideline. *Fam Med*. 2002;34:646-648.
8. Ables AZ, Baughman OL. The clinical pharmacist as a preceptor in a family practice residency training program. *Fam Med*. 2002;34:658-662.
9. Platt R, Davis R, Finkelstein J, et al. Multicenter epidemiologic and health services research on therapeutics in the HMO Research Network Center for Education and Research on Therapeutics. *Pharmacoepidemiol Drug Saf*. 2001;10:373-377.

Appendix. Answers to Survey Questions*

Survey Question	Participant	Mean	SD
During the workshop, I learned practical skills in evidence-based medicine.	Resident	1.40	0.52
	Preceptor	2.00	0.87
	Combined	1.70	0.73
I feel that I had access to all sources of information necessary to do an exhaustive literature search of the topic that I researched.	Resident	1.90	0.88
	Preceptor	1.89	0.33
	Combined	1.90	0.64
After participating in the workshop, I feel qualified to write clinical practice guidelines.	Resident	1.90	0.32
	Preceptor	2.00	0.71
	Combined	1.95	0.51
I would be interested in participating in the process of developing clinical practice guidelines in the future.	Resident	2.10	1.60
	Preceptor	1.78	0.67
	Combined	1.95	1.19
After participating in the workshop, I feel that I am qualified to appraise the quality of clinical practice guidelines.	Resident	1.90	0.74
	Preceptor	1.67	0.50
	Combined	1.75	0.64
After participating in the preparation of clinical practice guidelines myself, I have a broader understanding concerning the decision-making process involved in determining drug policies in the HMO.	Resident	1.70	0.67
	Preceptor	1.78	0.44
	Combined	1.75	0.55
Participation in the decision-making process strengthens my confidence in the HMO's policies.	Resident	1.80	0.42
	Preceptor	2.11	0.93
	Combined	1.95	0.69
I will use the guidelines developed during the workshop in my practice.	Resident	1.90	2.51
	Preceptor	1.44	0.53
	Combined	1.70	1.78
I think that I can now provide better care for the commonly treated infections in the community setting.	Resident	1.40	0.52
	Preceptor	1.56	0.73
	Combined	1.50	0.61
I would be interested in participating in future workshops conducted in this format.	Resident	1.50	0.53
	Preceptor	1.56	0.53
	Combined	1.60	0.60

*1 = strongly agree, 5 = strongly disagree. Eleven residents and 9 preceptors responded to this survey.